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VIII. *A Letter from Mr. Henry Baker, F. R. S. to the President, concerning an extraordinary Fish, called in Russia QUAB; and concerning the Stones call'd Crabs-Eyes.*

Read Feb. 25.  
1747-8.

HAVING been invited some time ago to a Correspondence in *Muscovy*, with Dr. *James Mounsey*, one of the Physicians to the *Czarina's* Armies, a Gentleman much esteemed in that Country, for his Knowledge in Natural Philosophy, and his unwearied Endeavours to discover Truth, I readily embraced so favourable an Opportunity of making Inquiry concerning some Things, as to which the Accounts hitherto received appeared to me extremely doubtful.

I therefore desired of the Doctor to send me what Information he could depend on, first, concerning the Swallows, and other Birds of Passage, that are observed in *Russia*, as we have had some Accounts of them that seem incredible. Secondly, concerning an extraordinary Fish in that Country, called the *Quab*, which is reported to be first a Tadpole, then a Frog, and at last a Fish. And, thirdly, I requested of him to inform me concerning the *Oculi Cancrorum*, commonly called *Crabs Eyes*, particularly as to their Production, and the Manner of their being gather'd.

In Answer to these Inquiries, I was favoured by the Doctor with a most obliging Letter, accompanied

nied by that remarkable Case of a *Fœtus* extracted by him from one of the *Fallopian* Tubes, where it had been lodged 13 Years (see this *Transf.* p. 131.). And I now beg Leave to lay before you some Extracts from this Letter, as Matters not only of Curiosity, but of considerable Moment also, in the Natural History of Animals.

He desires I'll allow him another Year to perfect his Observations on the Birds of Passage; being unwilling, he says, to rely on the Accounts of others, where he can come at the Knowledge of Things himself.

As to the *Quab*, which some report to be first a Tadpole, then a Frog, and at last a Fish, 'tis very well known, he says, to him; but with regard to such Changes, he believes them to be intirely fabulous. He has indeed seen, in the Chamber of Rarities at *Petersburg*, this Fish, preserv'd in Spirits, under all these Appearances; but was not permitted to take out any one of them, in order to remove the Scruples he made: However, desiring as far as possible to come at the Truth, he turn'd the Bottle hastily on one Side, to make the Fish fall to the Glass, which he thought they did, with more seeming Hardness than could be supposed in Fishes; which induced him to conjecture, that they are Pieces of Art, the Idea whereof has been taken from the Resemblance of the Head of this Fish to that of a Frog. Whence he supposes they may be made of Wax, and kept in this manner to amuse the World. If there be, he says, such a Thing in Nature (which he does not think probable) it must be peculiar to some one Place, whereof he has no

Knowledge.

Knowledge. He has made Inquiries about these imagin'd Changes, of People of many Nations, but could never learn any thing to the Purpose. He has seen the Fish itself in several Countries, and found they spawn'd like other Fishes, and grew in Size, without the least Similitude to what has been asserted. He adds further, that these Fishes delight in very clear Water, in Rivers with stony or sandy Bottoms, and are never found in standing Lakes, or Rivers passing thro' marshy or mossy Grounds, where Frogs chuse most to be.

As to my Inquiries concerning the *Crabs-Eyes*, he expresses a Surprise to find Naturalists differ so much from one another, and yet not one of them he has ever seen giving any true Account of the Situation, Formation, and casting of these concreted Bodies. He therefore is so obliging to send me the following Description from his own Observation and Knowledge.

Those Concretions called *Crabs-Eyes*, are found, says he, in the Bodies of Cray-fish. Each Fish annually produces two, one on either Side of the anterior and inferior Part of the Stomach, and each is generated about a Point lying between the Coats thereof. The flat or concave Side lies next the internal Coat, which is very thin and clear, though strong and horny; the convex Side is consequently outwards, and is immediately cover'd by the fleshy and softer Coats of the Stomach, whose Fibres make Impressions on its Surface. Between these two Membranes it grows by degrees *lamellatim*, and is supplied with petrifying Juices discharg'd through the Mouths of Vessels or *Sudamina* opening on the internal

nal Surface of the outer Coat. The inner Membrane, being horny, gives Resistance only; wherefore the Stones are concave on that Side, and the first remarkable Scale (whereon all the others are formed) may be perceiv'd in the Centre, the Brims or Circumferences of many of the rest being very apparent. At the time these Stones are not to be found in the Animal, there are little circular Spots, somewhat opake, and whiter than the rest of the Stomach, to be perceiv'd in their Place; nearly opposite to which are tenacious mucilaginous Substances, form'd like little *Placentulæ*, and call'd by some the Glands of the Brain: These are larger, and more perceptible when the Stones are wanting; but are not turned into Stones by different Degrees of Induration, as some have imagined them to be.

It is believed, he says, that they cast these Stones with their Shells, which they shed every Spring; but he finds this is not the Way of getting rid of them; for, a little before, or after the Time of their casting their Shell, the Stones break thro' the internal or horny Coat of the Stomach, and being ground or broken by the three serrated Teeth therein, become dissolv'd in the Space of a few Days, which makes it difficult to find them just at this time, and thereby gives Ground to imagine they are cast with the Shells. He says, however, he has found several of them in the Stomach partly consumed, one Specimen whereof he has sent herewith, and a farther Proof that they are so consumed, is, he thinks, their being never discover'd in Rivers, tho' the Fish themselves be in great Plenty there; and in the Shops it is observable, that many of these Stones are of a  
brown

brown Hue ; which is the Case of such as have been already lodg'd in the Cavity of the Stomach, when the Fish was taken. They likewise eat the old Shells immediately after shedding them \*. What the Use of these Stones to the Creature is, he cannot positively determine, but supposes they may be design'd to furnish new petrescent Juices to its Fluids; which may be also assisted by the old Shells which they devour, the Particles whereof, as well as of the Stones are probably dispos'd of, according to their Degree of Purity, and properly deposited at the Extremities of Vessels, for the Reproduction of their annually new crusty Dress; which, he observes, does not greatly recommend the Opinion that these Stones have a dissolving Quality, of Service against the Stone in the human Kidneys or Bladder.

The Doctor has sent along with this particular Account, Specimens of the Cray-fish both boil'd and raw, which differ little or nothing from those catch'd in our Rivers here; in which I am assured the like Concretions may be also found at a certain Time of the Year: He has likewise sent me some of their Stomachs dried, where the Stones appear, situated in the manner above described between the two Coats; and in one of them they are got thro' the internal Coat into the Stomach itself. I received also from him several Specimens of the beginning  
Scales,

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\* I have observed the same thing in the small fresh Water Shrimp; which I have kept in a Glass with Water throughout several of the Periods of its casting its Shell, which it does once in about a Month or five Weeks. The Water Newt also eats its Skin as soon as pull'd off, if it be not taken away.

Scales, or Concretions, of different Bigness, which he collected himself, in dissecting these Creatures; several of the formed Stones of his own taking out, some of a larger Size, which were given him by a Gentleman, who took them out of the Cray-fish in the River *Donne*, and others still larger, which he chose from the Apothecariry of the Army. These last were from *Astracan*; and he observes that the Fish and Stones are much the largest in the great Rivers there, where there are Fishers for Cray-fish on account of the Stones only; which they separate from the Fish at different Fisheries after different Manners; at some they are beaten to Pieces with wooden Pestles; then washing away the Flesh and Shells, the Stones are found remaining at the Bottom of the Vessel; at others they are laid in Heaps till they rot; and then, being wash'd, the Stones are easily separated and gather'd. The Price comes to a Groat or Sixpence a Pound. All the Apothecaries Shops throughout the whole *Russian* Empire are furnished with them, and great Quantities besides are exported.

This, Sir, seems to be a very particular and exact Account of these Productions, which are frequently prescribed in Medicine. Their Price, we find, is extremely low in the Countries where they are gather'd; notwithstanding which, fictitious Bodies, made of Chalk, Tobacco-pipe Clay, or other such-like Materials, cast in Moulds, so as to represent

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real Crabs-Eyes, are often substituted instead thereof. Permit me to subscribe myself with all possible Respect,

S I R,

London, Feb. 25.

1747-8. Your most obedient humble Servant,

Henry Baker.

IX. Brevis historia naturalis, five de Vita, Genere, Moribusque *Muris Alpini*: Autore *Jacobo Theodoro Klein*, Reipubl. *Gedanens.* à Secretis, et R. S. Lond. S. communicata per *Petrum Collinsonum*, ejusdem Societatis S.

Read Feb. 25. 1747-8. **B**ESTIÆ ex murium gliriumve genere

ad *animalia industria* numerantur. Nulli bestiarum, nedum insectorum multitudinibus, ingenitam denegamus industriam, *i. e.* mores et studia, pro vitæ suæ genere, ad conservationem et progeniem adæquata. In quibusdam circumscripta nobis videntur; uti juxta *aranearum* tribum, five ex telis, staminibus, retibus vel cassiculis scientificè constructis, five ex latebris victum capientium; quædam *philomusos* dixeris, ut admirandum animal *Castorem* (a), lignationis, hydrographiæ, aggerationis et architecturæ

(a) Conf. *quadr. Hist. prodrom.* p. 19. --- *Hist. de l'Acad. des Sciens.* 1737. p. 10. *ibid.* On ne trouve guere parmi les grands Animaux, que les *Castors*, qui ayent une de ces industries singulieres et incomprehensibles a l'Esprit humain.